



September 19, 2005



*Handwritten signature/initials*

**VIA FIRST CLASS MAIL**

CUSTOMER NUMBER

**22887**

PATENT TRADEMARK OFFICE

MAIL STOP ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Re: U.S. Patent Application Serial No.: 09/650,969  
Filed: August 29, 2000  
Confirmation No.: 8650  
Notice of Allowance Mailed: March 29, 2004  
Title: NEAR FIELD OPTICAL APPARATUS  
Inventor: Robert L. THORNTON et al.  
Our File No.: ST 2622.01 US

Dear Sir:

Enclosed for filing in the above-referenced application are the following documents:

1. Petition Under 37 CR 1.81(a), pages 1-4 with Exhibits A-H;
2. Attachment 1: Corrected Drawing (1 page);
3. Transmittal Form;
4. Return Receipt Postcard;
5. Cover Letter (Document Control Number: 8P1EQC); and
6. Certificate of First Class Mailing, dated September 19, 2005.

Very truly yours,

DISCOVISION ASSOCIATES

*Handwritten signature: Caroline Do*

Caroline Do, Reg. No. 47,529  
Senior Patent Prosecution Attorney  
INTELLECTUAL PROPERTY DEVELOPMENT

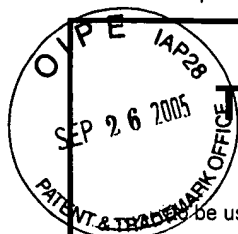
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Enclosures

<b>CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8</b>	
I hereby certify that this correspondence is being deposited with the United States Patent and Trademark Office as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below:	
September 19, 2005 (Date)	Jeannie Benedict (Type or print name)
<i>Handwritten signature: Jeannie Benedict</i> (Signature)	

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# TRANSMITTAL FORM

(This form may be used for all correspondence after initial filing)

		<b>Application Number</b>	09/650,969
		<b>Filing Date</b>	8/29/2000
		<b>First Named Inventor</b>	Robert L. THORNTON
		<b>Art Unit</b>	2878
		<b>Examiner Name</b>	Monbleau, Davienne
<b>Total Number of Pages in This Submission</b>		<b>Attorney Docket Number</b>	ST 2622.01 US

## ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input checked="" type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <p>Please see "Remarks" section below.</p>
<b>Remarks</b> Cover Letter; Certificate of First Class Mailing dated September 19, 2005; Return Receipt Postcard		

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

<b>Firm or Individual name</b>	DISCOVISION ASSOCIATES -- Intellectual Property Development 2355 Main Street, Suite 200, Irvine, CA 92614 -- U.S.A. -- Tel: (949) 660-5000
<b>Signature</b>	
<b>Date</b>	September 19, 2005

## CERTIFICATE OF TRANSMISSION / MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
<b>Typed or printed name</b>	Jeannie Benedict		
<b>Signature</b>		<b>Date</b>	September 19, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:  
Robert L. Thornton et al.

Filed: August 29, 2000

Serial No.: 09/650,969

For: Near Field Optical Apparatus

Art Unit: 2878

Examiner: Monbleau, Davienne

Attorney Docket Number:  
ST 2622.01 US

**PETITION TO WITHDRAW HOLDING OF ABANDONMENT  
UNDER 37 C.F.R. § 1.181 (a)**

MAIL STOP ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8**

I hereby certify that this correspondence is being deposited with the United States Patent and Trademark Office as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below:

September 19, 2005

(Date)

Jeannie Benedict

(Type or print name)

(Signature)

A Notice of Abandonment in the above-referenced application was mailed on August 4, 2005.

Applicants contend that the above-referenced application is not in fact abandoned and hereby petitions a withdrawal of the holding of abandonment based on the following facts:

1. A Notice of Allowance and Fee(s) Due with the mailing date of March 29, 2004 was received by the attorney of record for this application on April 2, 2004 (a copy is attached hereto as Exhibit A).

2. On the Notice of Allowability page of the Notice of Allowance, Box 6, which stated "CORRECT DRAWINGS (as "replacement sheets") must be submitted" was marked along with Box (b) "including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No./Mail Date 4/24/02."

3. After reviewing the file, the attorney of record at the time, Ms. Caroline Do, discovered the following:

- a) The Office action with the mailing date of 04/24/2002 stated that "The drawing(s) filed on 29 August 2000 is objected to by the Examiner" (a copy is attached hereto as Exhibit B). On page 2 of said Office action, the Examiner objected to the drawing because Fig. 29 does not have reference number 118.
- b) A Response, which included the corrected drawing, was filed on October 24, 2002. As stated in the Response, it is believed that the Office action intended to imply that Fig. 27 was in error not Fig. 29 (a copy of the Response and the filing receipt are attached hereto as Exhibit C).
- c) The Office action with the mailing date of 01/30/2003 had Box 11(a) marked which stated: "[t]he proposed drawing correction filed on 29 October 2002 is approved." The Examiner expressly stated on Page 2 of said Office action, "[t]he corrected or substitute drawings were received on 10/29/02. These drawings are accepted" (a copy of the 1/30/03 Office action is attached hereto as Exhibit D).

4. On April 26, 2004, Ms. Renee Franks, assistant to Ms. Do, contacted Examiner Monbleau to inquire whether the corrected drawings were still required since the latest Office action (1/30/03) stated that the corrected drawing(s) were received by the Office and accepted. Examiner Monbleau instructed Ms. Franks to "disregard the request for corrected drawings as the drawings are correct and meet USPTO requirements" and that there is no need to submit corrected drawings (a copy of the Telephone Memo memorializing the conversation between Ms. Franks and Examiner Monbleau is attached hereto as Exhibit E).

5. The issue fee of \$1,300.00 was timely paid on June 29, 2004 along with a Notification of Change in Fee Status (a copy is attached hereto as Exhibit F).

6. A copy of the Month Statement of Deposit Account from the USPTO for the month of June 2004, which shows the issue fee of the above-referenced application as charged by the USPTO on June 30, 2004 in the amount of \$1330.00 (a copy is attached hereto as Exhibit G).

7. A Notice of Abandonment with the mailing date 08/04/2005 was received with Box 3 marked, stating "Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37)." It further stated, as marked in Box 3(b), "No corrected drawings have been received" (a copy of the Notice of Abandonment is attached hereto as Exhibit H).

8. Several phone calls were made to Examiner Monbleau and her Supervisor, Mr. Porta between August 17, 2005 and August 24, 2005. A request was made to Supervisory Patent Examiner (SPE) Porta to withdraw the abandonment since Applicants believe that it has complied with all the requirements and the error was due to no fault of their own. SPE Porta stated that the only recourse is to file a Petition To Withdraw Holding of Abandonment since it is outside of his function at this point.

9. In the alternative, it is respectfully submitted the corrected drawing(s) herein as attachment 1.

CONCLUSION

In view of the evidence presented in support of the contention that the application is not in fact abandoned, the petition to withdrawn holding of abandonment should be granted, and such action is respectfully solicited.

MPEP 711.03(c) indicates that no fee is required for this petition. In the event the Applicant has incorrectly interpreted the relevant section of the fee requirement, the Commissioner is hereby authorized to charge payment of the fee required by 37 C.F.R. § 1.17(h), and any fees associated with this communication or credit any overpayment to Deposit Account No. 04-1175.

Respectfully submitted,  
DISCOVISION ASSOCIATES



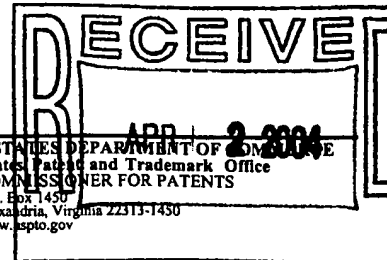
Date: September 19, 2005

Caroline T. Do  
Reg. No. 47,529

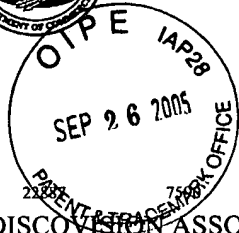
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# UNITED STATES PATENT AND TRADEMARK OFFICE



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United States Patent and Trademark Office  
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## NOTICE OF ALLOWANCE AND FEE(S) DUE

DISCOVERY ASSOCIATES  
INTELLECTUAL PROPERTY DEVELOPMENT  
2355 MAIN STREET, SUITE 200  
IRVINE, CA 92614

03/29/2004

ST  
Rev. 04/03

Incoming: 4/2/04 PS/DN  
Date Initials  
Outgoing: \_\_\_\_\_  
Date Initials

EXAMINER	
MONBLEAU, DAVIENNE N	
ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 03/29/2004

☒ Calleen ☒ Steve W. ☐  
☐ Kenny ☒ File ☐  
☒ Richard S. ☒ Docketing

ST 2622.01 US

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,969	08/29/2000	Robert L. Thornton	SIROS-020	8650

TITLE OF INVENTION: NEAR FIELD OPTICAL APPARATUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$665	\$0	\$665	06/29/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

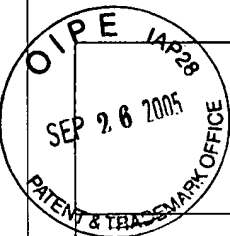
- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.
- ☐ Applicant claims SMALL ENTITY status.  
See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

DOCKETING  
RECEIVED DATE: 4/2/04  
INITIALS: RS/DN  
DUE DATE: 5/29/04  
FINAL DEADLINE: 6/29/04



## Notice of Allowability

Application No.

09/650,969

Examiner

Davienne Monbleau

Applicant(s)

THORNTON ET AL.

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the interview on 2/2/04 and the examiner's amendment included herein.
2. ☒ The allowed claim(s) is/are 1-48.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 4/24/02.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 2/19/04.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.





TB  
SD

CPI

Due 7/24/02

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
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Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,969	08/29/2000	Robert L. Thornton	SIROS-020	8650

7590

04/24/2002

Robert Hall  
Sierra Patent Group Ltd.  
P O Box 6149  
Stateline, NV 89449

EXAMINER

MONBLEAU, DAVIENNE N

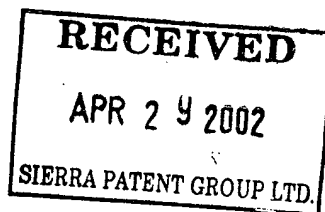
ART UNIT

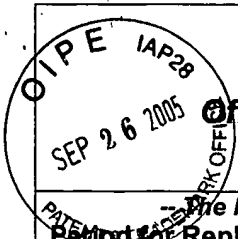
PAPER NUMBER

2828

DATE MAILED: 04/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.





# Office Action Summary

Application No.	Applicant(s)	
09/650,969	THORNTON ET AL.	
Examiner	Art Unit	
Davienne Monbleau	2828	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

*Paul IP*

PAUL IP

SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The IDS filed on 4/9/01 has been acknowledged and a signed copy of the PTO-1449 is attached herein.

### ***Specification***

On page 50 line 12, should "Figure 28" – be changed to – "Figure 29"?

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figure 29 does not have reference number 118. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding Claims 1, 9, 19 and 20, there is a lack of structural support in the

Art Unit: 2828

claims. What exactly is the device/apparatus? Simply stating there is a layer with a specific type of aperture does not provide sufficient structural support. Furthermore, what is defined by a protrusion? In what direction is it protruding into said aperture?

Further regarding Claims 7, 8, 15 and 16, if said protrusion(s) is/are part of said conductive plane, how can it/they be electrically isolated from said conductive plane?

Further regarding Claims 9 and 17, the phrase "associated with" is indefinite. Is it on top of, attached to, underneath, etc.?

Regarding Claims 18 and 30, the term "adjacent" is vague. Is it on top of, attached to, underneath, etc.?

Claim 20 recites the limitation "said transverse slot" in line 3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-29, to the extent taught and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Claisse et al. (U.S. Patent No. 6,084,900) in view of Sun et al. (U.S. Patent No. 5,915,165). Regarding Claim 1, Claisse et al. teach in Figure 2 an optical apparatus comprising a conductive plane (30) having an aperture (51). Claisse et al. do not teach a protrusion. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It

Art Unit: 2828

would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding a protrusion would alter said shape of the aperture.

Regarding Claim 9, Claisse et al. teach in Figure 2 an optical apparatus comprising a light source (22) and a conductive plane (30) having an aperture (51). Claisse et al. do not teach a protrusion. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding a protrusion would alter said shape of the aperture.

Regarding Claims 2-8 and 10-16, determining the exact size and shape of the aperture is optimization and involves routine skill in the art.

Regarding Claim 17, it is known in the art that metal may be used as a conductive layer.

Regarding Claim 18, Claisse et al. further teach an active region (22), a first reflective region (26) and a second reflective region (14), wherein said conductive layer (30) is adjacent an outer surface of said first reflective region.

Regarding Claim 19, Claisse et al. teach in Figure 2 a semiconductor laser apparatus comprising an emission facet having a conductive surface (30), wherein said conductive surface has an aperture (51) therein. Claisse et al. do not teach a protrusion. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding a protrusion would alter said shape of the aperture.

Regarding Claim 20, Claisse et al. teach in Figure 2 an optical apparatus comprising a conductive plane (30) having an aperture (51). Claisse et al. do not teach slots in said aperture. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding slots would alter said shape of the aperture.

Regarding Claims 21-29, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the relative length, width and location of said slots and connector regions since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 30-44, to the extent taught and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted Prior Art Figure 27 in view of Claisse et al. (U.S. Patent No. 6,084,900) and Sun et al. (U.S. Patent No. 5,915,165). Regarding Claim 30, Prior Art Figure 27 teaches a semiconductor laser comprising a laser active region (112), a first reflective region (116), a second reflective region (118) and an emission face (134) comprising a reflective conductive layer (138). Prior Art Figure 27 does not teach an aperture extending into said first reflective region. Claisse et al. teach in Figure 2 a semiconductor laser comprising an aperture (51) extending through a first reflective region (26). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the aperture in Prior Art Figure 27, as taught by Claisse et al., to provide a stable single high order mode laser source. Prior Art Figure 27 does not teach a protrusion. Sun et al. teach in Figure 6 that multiple aperture shapes

Art Unit: 2828

are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Prior Art Figure 27 in view of Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding a protrusion would alter said shape of the aperture.

Regarding Claim 37, Prior Art Figure 27 teaches a semiconductor laser comprising a laser active region (112), a first conductivity type upper reflective region (116), a second conductivity type lower reflective region (118) and an emission face (134). Prior Art Figure 27 does not teach an aperture extending into said first reflective region. Claisse et al. teach in Figure 2 a semiconductor laser comprising an aperture (51) extending through a first reflective region (26). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the aperture in Prior Art Figure 27, as taught by Claisse et al., to provide a stable single high order mode laser source. Prior Art Figure 27 does not teach the aperture size. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Prior Art Figure 27 in view of Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode.

Regarding Claim 31, determining the exact size and shape of the aperture is optimization and involves routine skill in the art.

Regarding Claim 32, Prior Art Figure 27 teaches that said reflective regions have a plurality of distributed Bragg mirrors.

Regarding Claims 33, 34 and 41, Claisse et al. teaches that an area under said aperture has a smaller number of mirrors and lower reflective than does an area surrounding said aperture.

Regarding Claims 35, 36, 39 and 40, semiconductor contact layers and oxide layers are well known in the art.

Regarding Claim 38, see discussion on Claim 30.

Regarding Claim 42, Prior Art Figure 27 teaches that said upper reflective region comprises a plurality of p-doped quarter wave layer pairs (120) and that said lower reflective region comprises a plurality of n-doped quarter wave layer pairs (120).

Regarding Claim 43, see discussion on Claim 33.

Regarding Claim 44, determining the exact size and shape of the aperture is optimization and involves routine skill in the art.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Adams et al. (U.S. Patent No. 6,061,381) teach in Figure 1 a semiconductor laser comprising an aperture (D) in a reflective region (11 and 12). Ueki (U.S. Patent No. 6,320,893) teaches in Figure 5a-5e various aperture shapes for a semiconductor laser. Shieh et al. (U.S. Patent No. 5,838,705) teach in Figure 2 a semiconductor laser comprising an aperture (233), an insulative layer (245), a conductive layer (243) and a reflective region (240).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davienne Monbleau whose telephone number is 703-306-5803. The examiner can normally be reached on Mon-Fri 10:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the



Art Unit: 2828

organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

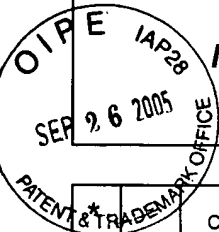
*Daniëlle Monbleau*

DNM

April 9, 2002

*Paul IP*

PAUL IP  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800



# Notice of References Cited

Application/Control No. 09/650,969	Applicant(s)/Patent Under Reexamination THORNTON ET AL.	
Examiner Davienne Monbleau	Art Unit 2828	Page 1 of 1

## U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6084900	07-2000	Claisse et al.	372/50
	B	US-5915165	06-1999	Sun et al.	438/47
	C	US-5838705	11-1998	Shieh et al.	372/45
	D	US-6320893	11-2001	Ueki	372/96
	E	US-6061381	05-2000	Adams et al.	372/96
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

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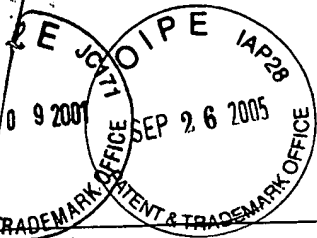
*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

## NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Davienne Monbleau 4-9-02



Form PTO 1449

(Rev. 2-32)

U.S. Department of Commerce  
Patent and Trademark OfficeAtty. Docket No.  
SIROS-00-013Serial No.  
09/650,969

## Information Disclosure Statement by Applicant

(Use several sheets if necessary)

Applicant:  
Thornton, et al.

Filed: 8/29/00 Group: 2881

## Other Documents (Including Author, Title, Date, Pertinent Pages, etc.)

DM

Near-Field Analysis of Micro-Aperture Surface Emitting Laser for High Density Optical Data Storage, Shinada, et al., Optical Review - Vol. 6, No. 6, 8-'99.

High-power Laser Light Source for Near-Field Optics and its Application to High-Density Optical Data Storage, Partovi, et al., Vol. 75, No. 11, 7-'99.

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An Optically Accessed Memory using the Lippmann Process for Information Storage, Fleisher, et al., Performed under Government Contract No. AF33-657-11589, Aeronautical Systems Division, 1965.

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Optical Near-Field Probe action in Microdisk Laser with 0.12 Resolution, Yamada, et al., Vol. 35, No. 3, '99.

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Proposal of Optical Near-Field Probe Using Evanescent Field of Microdisk Laser, Sakai, et al., Japan, '97.

Examiner

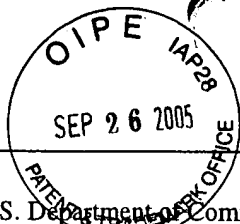
Dawnielle Monbleau

Date Considered

3/27/02

Examiner: Initial if citation considered, whether or not citation is in conference with MPEP 609; Draw line through citation if not conformance and not considered. Include a copy of this form with the next communication to applicant.

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TRADEMARK OFFICE  
P.T.O. 449  
U.S. 2-32)Page 1 of 1U.S. Department of Commerce  
Patent and Trademark OfficeAtty. Docket No.  
SIROS-00-013Serial No.  
09/650,969

## Information Disclosure Statement by Applicant

Applicant:  
Thornton, et al.

(Use several sheets if necessary)

Filed: 8/29/00 Group: 2881

## U.S. Patent Documents

Init.	Document No.	Date	Name	Class	Subclass	Filing Date
DM	4,460,977	7/17/84	Shimada, et al.	365	106	2/3/82
	4,860,276	8/22/89	Ukita, et al.	369	119	9/16/87
	5,559,773	9/24/96	Kentatsu, et al.	369	44.42	5/31/94
	5,590,110	12/31/96	Sato	369	100	12/27/94
	5,619,371	4/8/97	Pontius	359	368	3/2/95
	5,625,617	4/29/97	Hopkins, et al.	369	121	9/6/95
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DM	5,978,408	11/2/99	Thornton	372	96	9/30/97

## Foreign Documents

							Translation	
Init.	Document No.	Date	Country	Class	Subclass		Yes	No
DM	JP 10143895	5/29/98	Japan	G11B007	125			X
	JP 10172166	6/26/98	Japan	G11B007	125			X
	JP 10255302	9/25/98	Japan	G11B007	125			X
	JP 10340468A	12/22/98	Japan	G11B007	125	X		
	JP 63306546A	12/14/98	Japan	G11B007	135	X		
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	Near-Field Analysis of Micro-Aperture Surface Emitting Laser for High Density Optical Data Storage, Shinada, et al., Vol. 6, No. 6, 8-'99.

Examiner

Danyenne Marleau

Date Considered

3/27/02

Examiner: Initial if citation considered, whether or not citation is in conference with MPEP 609; Draw line through citation if

Please acknowledge receipt of the following by affixing hereon the Patent Office date stamp and returning this card to our office.

Inventor(s): Thornton et al.  
Serial No.: 09/650,969  
Filing Date: August 29, 2000  
Attorney: Andrew D. Gathy  
Docket No.: SIROS-020  
Title: **NEAR FIELD OPTICAL APPARATUS**

Papers Filed:

1. return postcard
2. Transmittal Letter in duplicate (1p)
3. Request for Extension of Time (1p)
4. Amendment and Response to Office Action (17pp)
5. Proposed Drawing FIG. 27
6. Check in the amount of \$460.00

Date: October 24, 2002

tb

to: Director of Patents

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Inventor(s): Thornton et al.  
Serial No.: 09/650,969  
Filing Date: August 29, 2000  
Attorney: Andrew D. Gathy  
Docket No.: SIROS-020  
Title: **NEAR FIELD OPTICAL APPARATUS**

Papers Filed:

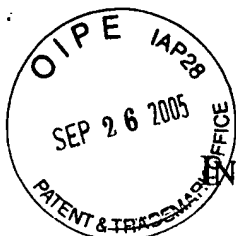
1. return postcard
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4. Amendment and Response to Office Action (17pp)
5. Proposed Drawing FIG. 27
6. Check in the amount of \$460.00



Date: October 24, 2002

tb

to: Director of Patents



PATENT  
Docket No.: SIROS-020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2828

Examiner: Monbleau, D. N.

Serial No.: 09/650,969

Filed: August 29, 2000

In re Application of: Thornton et al.

For: NEAR FIELD OPTICAL APPARATUS

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail, in an envelope addressed to Director of Patents, Washington, D.C. 20231-0001, on 10-24-02, Signed Tina Bounds

Tina Bounds

**TRANSMITTAL LETTER**

Director of Patents  
Washington, D.C. 20231

Sir:

Enclosed herewith for filing with respect to the above-identified patent application, please find:


1. Request for Extension of Time;
2. Response to Office Action dated 4/24/02;
3. Proposed Drawing Fig. 27; and
4. Check in the amount of \$460.00 for extension fee of 3 months for a **Small Entity**.

In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, the Assistant Commissioner is hereby authorized to charge or credit the difference to our Deposit Account No. 50-0612. A duplicate of this page is enclosed.

Respectfully submitted,  
Sierra Patent Group, Ltd.

Dated: October 24, 2002

Sierra Patent group, Ltd.  
P.O. Box 6149  
Stateline, NV 89449  
(775) 586-9500

  
Andrew D. Gathy  
Reg. No. 46,441



PATENT  
Docket No.: SIROS-020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2828

Examiner: Monbleau, D. N.

Serial No.: 09/650,969

Filed: August 29, 2000

In re Application of: Thornton et al.

For: NEAR FIELD OPTICAL APPARATUS

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Tina Bounds

**REQUEST FOR EXTENSION OF TIME**

Director of Patents  
Washington, D.C. 20231

Dear Sir:

Applicant(s) request an extension of time of 3 months to respond to the Office Action of April 24, 2002. Enclosed is the requisite fee of \$460.00 as calculated pursuant to 37 C.F.R. §1.17(a-c) below:


	Small Entity	Std. Fee
One month extension	<input type="checkbox"/> \$ 55.00	<input type="checkbox"/> \$ 110.00
Two month extension	<input type="checkbox"/> \$200.00	<input type="checkbox"/> \$ 400.00
Three month extension	<input checked="" type="checkbox"/> \$460.00	<input type="checkbox"/> \$ 920.00

The Assistant Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No.: 50-0612.

Respectfully submitted,  
Sierra Patent Group, Ltd.

Dated: October 24, 2002

Sierra Patent Group, Ltd.  
P.O. BOX 6149  
Stateline, NV 89449  
(775) 586-9500

  
Andrew D. Gathy  
Reg. No. 46,441



PATENT  
Docket No.: SIROS-020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2828

Examiner: Monbleau, D. N.

Serial No.: 09/650,969

Filed: August 29, 2000

In re Application of: Thornton et al.

For: NEAR FIELD OPTICAL APPARATUS

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail, in an envelope addressed to Director of Patents, Washington, D.C. 20231-0001, on 10-24-02, Signed Tina Bounds

Tina Bounds

**AMENDMENT AND RESPONSE TO OFFICE ACTION**

Director of Patents  
Washington, D.C. 20231

Dear Sir:

In response to the Office Action dated April 24, 2002, kindly amend the above-identified application as follows.

**In the Drawings**

Submitted herewith for the Examiner's approval are proposed amendments to FIG. 27. The proposed amendments to the figure are indicated thereon in red ink. It is believed that the office action intended to imply that FIG. 27 was in error not FIG. 29.



In the Specification

At page 50 and 51, kindly replace the paragraph bridging pages 50 and 51 with the following:

Referring now to FIG. 29, a vertical cavity surface emitting laser or VCSEL 146 in accordance with the present invention is shown. VCSEL 146 is shown as a GaAlAs device structured and configured for output at approximately 821.9 nm, and it should be readily understood that the layer thicknesses and semiconductor materials used for VCSEL 146 may vary as required for different applications. Thus, VCSEL 146 may be fabricated from various semiconductor materials, including, for example, GaAs, InGaAs, InGaAsP and InP materials, and can be structured and configured to provide various output wavelengths. The thicknesses of various layer components of VCSEL 146 as shown in FIG. 29 are exaggerated for clarity, and the particular layer thicknesses shown are merely illustrative and are not necessarily to scale.

In the Claims

Kindly amend claims 1, 9, 17, 19, and 20 as follows:

1. A near field optical apparatus comprising:  
a conductive layer defining an aperture therein, said aperture having a perimeter;  
said conductive layer having at least one protrusion extending into said aperture at said perimeter, wherein said protrusion into said aperture is configured to produce a transmission mode with very high throughput.

9. A near field optical apparatus, comprising:
- (a) a light source;
  - (b) a conductive plane proximate to said light source, said conductive plane having an aperture therein positioned such that light from said light source passes through said aperture;
  - (c) said conductive plane including at least one protrusion which extends into said aperture, wherein said protrusion extending into said aperture forms an aperture shape that produces very high light throughput.

17. The near field optical apparatus of claim 9, wherein said light source is a semiconductor laser, and said conductive plane is a metal layer proximate to an emission facet of said semiconductor laser.

19. A semiconductor laser apparatus comprising an emission facet having a conductive surface, said conductive surface having an aperture therein, said conductive surface including at least one protrusion extending into said aperture, said at least one protrusion and said aperture configured to produce a transmission mode with very high throughput.

20. A near field optical apparatus comprising a conductive plane having an aperture therein, said aperture including a plurality of spaced apart slots, and at least one connector region joined to each adjacent said spaced apart slot.

## REMARKS

The specification and drawings have been amended to correct minor errors noted in the Office Action and otherwise.

Claims 1, 9, 17, 19, and 20 have been amended to further particularly point out and distinctly claim subject matter regarded as the invention. The amendments here presented are made for the purposes of better defining the invention, rather than to overcome the rejections for patentability. Support for the amendments herein presented can be found in the specification and claims as filed. No new matter has been introduced as a result of the amendments. Reconsideration and allowance is respectfully requested in view of the amendments and the following remarks.

### Objections

The specification has been amended to correct the reference to FIG. 28.

The FIG. 27 has been amended to correct the numeral “18” and provide the proper reference numeral “118.” Entry of the amendments is respectfully requested.

### The 35 U.S.C. § 112 Rejection

Claims 1-36 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter applicant regards as the invention. This objection is respectfully traversed.

The Office Action asserts that claims 1, 9, 19, and 20 lack structural support. It was not understood by the Examiner, what structure was claimed and what a protrusion is or what direction the protrusion extends. Applicants respectfully disagree with the assertions in the Office Action. The independent claim 1 has been amended to more clearly claim the invention. Structural limitations are provided in the claims. The term

protrusion is used within ordinary meaning and is well supported in the specification and drawings. The protrusion location in relationship to other structure is claimed as well.

The Office Action asserts with regard to claims 7, 8, 15 and 16 that it is not understood how the protrusion can be electrically isolated from the conductive plane. The configuration of the protrusion and conductive plane is clearly described in the specification at least at page 5, third paragraph, page 13, second paragraph, the paragraphs bridging pages 40-41 and 41-42 as well as FIG. 26A.

The Office Action asserts that claims 9 and 17 have an indefinite phrase “associated with.” The claims have been amended.

The Office Action asserts that claims 18 and 30 have an indefinite term “adjacent.” Applicants respectfully disagree with the assertion. The term adjacent is well understood in the art and is used in the normal context of the meaning. The specification discloses the special relationship of the elements claimed and is within the meaning in the art.

A claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought. *In re Swunehart*, 160 USPQ 226 (CCPA 1971).

The Office Action asserts that claim 20 recites “said transverse slot” and that there is insufficient antecedent basis. Claim 20 has been amended and is in condition for allowance.

With this amendment it is respectfully submitted the claims satisfy the statutory requirements.

The 35 U.S.C. § 103 Rejection

Claims 1-29 stand rejected under 35 U.S.C. § 103 as being allegedly unpatentable over Claisse et al. (U.S. Patent No. 6,084,900) in view of Sun et al. (U.S. Patent No. 5,915,165). This rejection is respectfully traversed.

In the Office Action at paper number 6, the Office Action asserts with regard to claim 1, that Claisse et al. teach in Figure 2 an optical apparatus comprising a conductive plane 30 having an aperture 51. The Office Action admits that Claisse et al. do not teach a protrusion. The Office Action asserts that Sun et al. teach in Figure 6 that multiple aperture shapes are shown. The Office Action asserts that it would have been obvious to alter the aperture shape in Claisse et al. as taught by Sun et al. to limit the light emission to a particular mode and that adding a protrusion would alter the shape of the aperture. The Office Action asserts that adding a protrusion would alter the shape of the aperture. Applicants respectfully disagree with the assertions in the Office Action.

The Claisse et al. reference merely teaches an array of annular waveguide VCSEL's for achieving a stable single high order mode light source. Each VCSEL defines an annular emission region through which light generated by the annular waveguide VCSEL is emitted. There are a plurality of annular waveguides in the array, each waveguide emitting a single high order mode of a wavelength different than the other VCSEL devices in the array. The Claisse et al. reference is silent as to the shape or pattern of the annular emission region, contact layer or non-lasing area.

The Sun et al. reference merely teaches a vertical cavity surface emitting laser with accurately defined and controlled aperture which directs the current path within the laser. The Sun et al. reference teaches a process to form the aperture by pre-oxidation layer disordering which produces highly reproducible optical and electrical

characteristics. The Sun et al. reference at FIG. 6 shows anisotropic apertures 136, 138 and 140 of virtually any other shape. The Sun et al. reference teaches that the Sun et al. invention can be formed into any arbitrary shape or size in contrast to previous methods that produce jagged uneven boundaries. The Sun et al. reference is silent with regard to altering the aperture for a particular mode. The Sun et al. reference does not teach or suggest a protrusion.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Establishing a *prima facie* case of obviousness requires that all elements of the invention be disclosed in the prior art. *In re Wilson*, 165 USPQ 494, 496 (C.C.P. A. 1970).

The combination of Claisse et al. with Sun et al. fails to claim each and every claimed element. There is no near field optical apparatus comprising a conductive layer defining an aperture therein, said aperture having a perimeter said conductive layer having at least one protrusion extending into said aperture at said perimeter, wherein said protrusion into said aperture is configured to produce a transmission mode with very high throughput at least as claimed in Claim 1. The vague and generalized teaching in the Sun et al. reference regarding any arbitrary shape fails to rise to the level of teaching or suggesting the claimed elements. Neither of the references teaches nor suggests the element of a protrusion into the aperture. Since each and every claimed element is not taught or suggested in the prior art, then there is no *prima facie* case of obviousness.

Regarding Claim 9, the Office Action asserts that the Claisse et al. reference teaches in figure 2 an optical apparatus comprising a light source 22 and a conductive

plane 30 having an aperture 51. The Office Action admits that the Claisse et al. reference does not teach a protrusion. The Office Action asserts that Sun et al. teach in figure 6 that multiple aperture shapes are known. The Office Action asserts that it would have been obvious to alter the aperture shape in Claisse et al. as taught by Sun et al. to limit the light emission to a particular mode. The Office Action asserts that adding a protrusion would alter the shape of the aperture. The Office Action fails to assert that a protrusion extends into the aperture is taught or suggested.

The prior art combination of the Claisse et al. reference with the Sun et al. reference fails to teach each and every claimed element. The prior art combination does not teach or suggest a near field optical apparatus, comprising a light source; a conductive plane proximate to said light source, said conductive plane having an aperture therein positioned such that light from said light source passes through said aperture, said conductive plane including at least one protrusion which extends into said aperture, wherein said protrusion extending into said aperture forms an aperture shape that produces very high light throughput, at least as claimed in Claim 9. Since each and every claimed element is not taught or suggested in the prior art, then there is no *prima facie* case of obviousness.

Regarding Claim 19, the Office Action asserts that Claisse et al. teach at figure 2 a semiconductor laser apparatus comprising an emission facet having a conductive surface 20 wherein said conductive surface has an aperture 51 therein. The Office Action admits that the Claisse et al. reference does not teach a protrusion. The Office Action asserts that Sun et al. teach in figure 6 that multiple aperture shapes are known. The Office Action asserts that it would have been obvious to alter the aperture shape in Claisse et al. as taught by Sun et al. to limit the light emission to a particular mode. The Office Action asserts that adding a protrusion would alter the shape of the aperture.

The prior art combination of the Claisse et al. reference with the Sun et al. reference fails to teach each and every claimed element. The prior art combination does not teach or suggest a semiconductor laser apparatus comprising an emission facet having a conductive surface, said conductive surface having an aperture therein, said conductive surface including at least one protrusion extending into said aperture, said at least one protrusion and said aperture configured to produce a transmission mode with very high throughput, at least as claimed in Claim 19. Since each and every claimed element is not taught or suggested in the prior art, then there is no *prima facie* case of obviousness.

Regarding Claim 20, the Office Action asserts that Claisse et al. teach at figure 2 an optical apparatus comprising a conductive plane 30 having an aperture 51 therein. The Office Action admits that the Claisse et al. reference does not teach a protrusion. The Office Action asserts that Sun et al. teach in figure 6 that multiple aperture shapes are known. The Office Action asserts that it would have been obvious to alter the aperture shape in Claisse et al. as taught by Sun et al. to limit the light emission to a particular mode. The Office Action asserts that adding slots would alter the shape of the aperture.

The prior art combination of the Claisse et al. reference with the Sun et al. reference fails to teach each and every claimed element. The prior art combination does not teach or suggest a near field optical apparatus comprising a conductive plane having an aperture therein, said aperture including a plurality of spaced apart slots, and at least one connector region joined to each adjacent said spaced apart slot, at least as claimed in Claim 20. Since each and every claimed element is not taught or suggested in the prior art, then there is no *prima facie* case of obviousness.

The Office Action asserts that determining the exact size and shape of the aperture is optimization and involves routine skill in the art. Applicants respectfully disagree with the assertion in the Office Action. It is asserted that the exact size and shape of the



aperture is not merely routine optimization. It is respectfully requested that the Examiner provide specific citation from the cited prior art or provide an Affidavit to provide evidence to support the assertion. The mere assertion alone is not sufficient to uphold the rejection and is not evidence. Broad conclusory statements standing alone are not evidence. *In re Kotzab*, 55 USPQ2d 1317, (Fed. Cir. 2000).

Regarding claims 21-29, the Office Action asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the relative length, width and location of the slots and connector regions since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. The Office Action cites *In re Boesh*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). Applicants respectfully disagree with the assertion in the Office Action.

The Office Action has misconstrued the case law regarding result effective variables. The case cited by the Examiner, *In re Boech*, does not hold that discovering an optimum value of a result effective variable involves only routine skill in the art. The holding in the case *In re Boech*, was that the court held that the appellants have failed to rebut a prima facie case of obviousness. The case provides for headnotes that are taken from *In re Antonie*, which states the rule that discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill in the art.

A particular parameter first must be recognized as a result-effective variable, i.e. a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 195 USPQ 6 (CCPA 1977).

The Examiner has the burden of proving with specific evidence from the prior art references the result effective variables. The prior art reference of Sun et al. teaches a method of making an aperture with smooth edges in a consistent manner. The method

taught in the Sun et al. reference can be applied to any arbitrary shape to make smooth edges. However, none of the claimed elements in claims 21-29 are taught or suggested, let alone taught or suggested as result effective variables in any of the cited prior art references.

Claims 30-44 stand rejected under 35 U.S.C. § 103 as being allegedly unpatentable over Applicant's admitted prior art Figure 27 in view of Claisse et al. (U.S. Patent No. 6,084,900) and Sun et al. (U.S. Patent No. 5,915,165). This rejection is respectfully traversed.

The Office Action asserts at Paper number 6, that the Prior Art Figure 27 and the Claisse et al. reference together can be combined to provide a single high order mode laser source. The Office Action admits that both the Prior Art Figure 27 and the Claisse et al. reference together do not teach a protrusion. The Office Action asserts that the Sun et al. reference at Figure 6 teaches multiple aperture shapes. The Office Action asserts that it would have been obvious to alter the aperture shape in the Prior Art Figure 27 in view of the Claisse et al. reference and the Sun et al. reference to limit emission to a particular mode. The Office Action asserts that adding a protrusion would alter the shape of the aperture. Applicants respectfully disagree with the assertions in the Office Action.

The prior art cited in combination does not teach or suggest at least an emission face including an aperture extending through said reflective conductive layer and into at least a portion of said first reflective region, said reflective conductive layer including at least one protrusion which extends into said aperture, at least as claimed in part in Claim 30. Since each and every claimed element is not taught or suggested in the prior art, then there is no *prima facie* case of obviousness.

Additionally, for an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art;

that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

There is no motivation to combine the prior art references. There is no teaching in the prior art that suggests limiting the light emission to a particular mode by way of adding a structural protrusion into the aperture. It is requested that the Examiner specifically cite from the prior art of record to provide evidence to support the assertion and evidence of a motivation to combine the references.

Regarding Claim 37, the Office Action repeats the above argument. The Office Action admits that the Prior Art Figure 27 does not teach the aperture size. The Office Action asserts that it would be obvious to alter the aperture shape. Applicants respectfully disagree.

The prior art does not teach or suggest all of the claim limitations and is silent regarding a semiconductor laser comprising a laser active region; a first conductivity type upper reflective region adjacent an upper side of said active region; a second conductivity type lower reflective region adjacent a lower side of said active region; and an emission facet adjacent said upper reflective region, said emission facet having an aperture therein, said aperture smaller than a guide mode of said semiconductor laser, said aperture extending into at least a portion of said upper reflective region, at least as claimed in Claim 37.

Regarding Claim 31 and 44, the Office Action asserts that the exact size and shape of the aperture is optimization and involves routine skill in the art. Applicants respectfully disagree. It must be shown in the prior art references that altering the size or shape of the aperture is a result effective variable. The Office Action has not provided evidence to support the assertion. Evidence is respectfully requested.

Incorrect Logical Conclusion

Throughout the Office Action the conclusion is drawn that adding a protrusion would alter the shape of the aperture. This conclusion is based on faulty reasoning. On its face, adding a protrusion to an aperture will alter the shape of the aperture. However, there has not been any evidence that the prior art teaches or suggests a protrusion, or adding a protrusion to the aperture. The prior art merely teaches an aperture. The prior art merely teaches a process that consistently creates smooth edges of an aperture for any arbitrary shape. However, there is no teaching or suggestion to add a protrusion to an aperture to create an aperture of special shape. In order to draw the conclusion that the prior art renders the claimed invention obvious requires a teaching of a particular aperture, a teaching of adding the structural protrusion to the aperture and the teaching or motivation to add the protrusion to the aperture for a specific reason. Merely stating that adding a protrusion would alter the shape of the aperture is not sufficient basis for obviousness and does not have logical support from the evidence in the prior art.

Since the Office Action has been traversed and the rejection fails to make out a *prima facie* case of obviousness, Applicant respectfully requests that the Examiner provide specific citation and an Affidavit in support of the assertions in the Office Action that each and every claimed element is rendered obvious.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Dependent Claims

The argument and evidence set forth above is equally applicable here. Since the independent Claims 1, 9, 20, 30 and 37 are allowable, then the dependent Claims 2-8, 10-18, 21-29, 31-36 and 38-44 must also be allowable. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596 (Fed. Cir. 1988).

In view of the foregoing, it is respectfully requested that the rejection be withdrawn and it is respectfully asserted that the claims are now in condition for allowance.

Request for Allowance


It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Dated: October 24, 2002

Respectfully submitted,  
Sierra Patent Group, Ltd.

Sierra Patent Group  
P.O. Box 6149  
Stateline, NV 89449  
(775) 586-9500

  
Andrew D. Gathy  
Reg. No. 46,441

The following paragraphs provide the “As Amended” changes in a Marked-up format.

IN THE SPECIFICATION

**Marked-up**

The paragraph bridging pages 50 and 51.

Referring now to FIG. [28] 29, a vertical cavity surface emitting laser or VCSEL 146 in accordance with the present invention is shown. VCSEL 146 is shown as a GaAlAs device structured and configured for output at approximately 821.9 nm, and it should be readily understood that the layer thicknesses and semiconductor materials used for VCSEL 146 may vary as required for different applications. Thus, VCSEL 146 may be fabricated from various semiconductor materials, including, for example, GaAs, InGaAs, InGaAsP and InP materials, and can be structured and configured to provide various output wavelengths. The thicknesses of various layer components of VCSEL 146 as shown in FIG.[28] 29 are exaggerated for clarity, and the particular layer thicknesses shown are merely illustrative and are not necessarily to scale.

IN THE CLAIMS

**Marked-up**

1.(Amended) A near field optical apparatus comprising:

a conductive [plane having] layer defining an aperture therein, said aperture having a perimeter;

said conductive [plane] layer having at least one protrusion extending into said aperture at said perimeter, wherein said protrusion into said aperture is configured to produce a transmission mode with very high throughput.

9. (Amended) A near field optical apparatus, comprising:

(a) a light source;

(b) a conductive plane [associated with] proximate to said light source, said conductive plane having an aperture therein positioned such that light from said light source passes through said aperture;

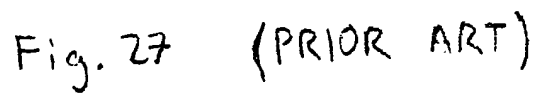
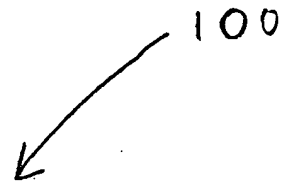
(c) said conductive plane including at least one protrusion which extends into said aperture, wherein said protrusion extending into said aperture forms an aperture shape that produces very high light throughput.

17. (Amended) The near field optical apparatus of claim 9, wherein said light source is a semiconductor laser, and said conductive plane is a metal layer [associated with] proximate to an emission facet of said semiconductor laser.

19. (Amended) A semiconductor laser apparatus comprising an emission facet having a conductive surface, said conductive surface having an aperture therein, said conductive surface including at least one protrusion extending into said aperture, said at least one protrusion and said aperture configured to produce a transmission mode with very high throughput.

20. (Amended) A near field optical apparatus comprising a conductive plane having an aperture therein, said aperture including a plurality of spaced apart slots, and at least one connector region joined to each adjacent said [transverse] spaced apart slot.





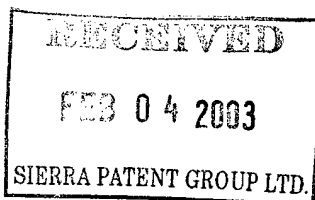


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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,969	08/29/2000	Robert L. Thornton	SIROS-020	8650

Robert Hall  
Sierra Patent Group Ltd.  
P O Box 6149  
Stateline, NV 89449



EXAMINER
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MONBLEAU, DAVIENNE N

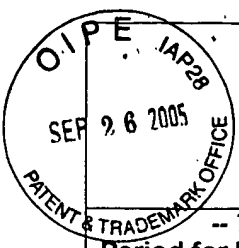
ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 01/30/2003

Due 4/30/03 CPL-

Please find below and/or attached an Office communication concerning this application or proceeding.



# Office Action Summary

Application No.

09/650,969

Applicant(s)

THORNTON ET AL.

Examiner

Davienne Monbleau

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 29 October 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

Notice of References Cited (PTO-892)

Notice of Draftsperson's Patent Drawing Review (PTO-948)

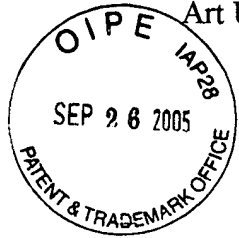
Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_

4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Drawings*

The corrected or substitute drawings were received on 10/29/02. These drawings are accepted.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding Claims 1, 9, 19 and 20, there is a lack of structural support in the claims. Simply stating there is a layer with a specific type of aperture does not provide sufficient structural support for a near field optical apparatus.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-29, to the extent taught and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Claisse et al. (U.S. Patent No. 6,084,900) in view of Sun et al. (U.S. Patent No. 5,915,165). Regarding Claim 1, Claisse et al. teach in Figure 2 an optical apparatus comprising a conductive plane (30) having an aperture (51). Claisse et al. do not teach a protrusion. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It

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would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding a protrusion would alter said shape of the aperture.

Regarding Claim 9, Claisse et al. teach in Figure 2 an optical apparatus comprising a light source (22) and a conductive plane (30) having an aperture (51). Claisse et al. do not teach a protrusion. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding a protrusion would alter said shape of the aperture.

Regarding Claims 2-8 and 10-16, determining the exact size and shape of the aperture is optimization and involves routine skill in the art.

Regarding Claim 17, it is known in the art that metal may be used as a conductive layer.

Regarding Claim 18, Claisse et al. further teach an active region (22), a first reflective region (26) and a second reflective region (14), wherein said conductive layer (30) is adjacent an outer surface of said first reflective region.

Regarding Claim 19, Claisse et al. teach in Figure 2 a semiconductor laser apparatus comprising an emission facet having a conductive surface (30), wherein said conductive surface has an aperture (51) therein. Claisse et al. do not teach a protrusion. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding a protrusion would alter said shape of the aperture.

Regarding Claim 20, Claisse et al. teach in Figure 2 an optical apparatus comprising a conductive plane (30) having an aperture (51). Claisse et al. do not teach slots in said aperture. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding slots would alter said shape of the aperture.

Regarding Claims 21-29, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the relative length, width and location of said slots and connector regions since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

2nd Arg  
• Claims 30-44, to the extent taught and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted Prior Art Figure 27 in view of Claisse et al. (U.S. Patent No. 6,084,900) and Sun et al. (U.S. Patent No. 5,915,165). Regarding Claim 30, Prior Art Figure 27 teaches a semiconductor laser comprising a laser active region (112), a first reflective region (116), a second reflective region (118) and an emission face (134) comprising a reflective conductive layer (138). Prior Art Figure 27 does not teach an aperture extending into said first reflective region. Claisse et al. teach in Figure 2 a semiconductor laser comprising an aperture (51) extending through a first reflective region (26). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the aperture in Prior Art Figure 27, as taught by Claisse et al., to provide a stable single high order mode laser source. Prior Art Figure 27 does not teach a protrusion. Sun et al. teach in Figure 6 that multiple aperture shapes

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are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Prior Art Figure 27 in view of Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode. Adding a protrusion would alter said shape of the aperture.

Regarding Claim 37, Prior Art Figure 27 teaches a semiconductor laser comprising a laser active region (112), a first conductivity type upper reflective region (116), a second conductivity type lower reflective region (118) and an emission face (134). Prior Art Figure 27 does not teach an aperture extending into said first reflective region. Claisse et al. teach in Figure 2 a semiconductor laser comprising an aperture (51) extending through a first reflective region (26). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the aperture in Prior Art Figure 27, as taught by Claisse et al., to provide a stable single high order mode laser source. Prior Art Figure 27 does not teach the aperture size. Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape in Prior Art Figure 27 in view of Claisse et al., as taught by Sun et al., to limit the light emission to a particular mode.

Regarding Claim 31, determining the exact size and shape of the aperture is optimization and involves routine skill in the art.

Regarding Claim 32, Prior Art Figure 27 teaches that said reflective regions have a plurality of distributed Bragg mirrors.

Regarding Claims 33, 34 and 41, Claisse et al. teaches that an area under said aperture has a smaller number of mirrors and lower reflective than does an area surrounding said aperture.

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Regarding Claims 35, 36, 39 and 40, semiconductor contact layers and oxide layers are well known in the art.

Regarding Claim 38, see discussion on Claim 30.

Regarding Claim 42, Prior Art Figure 27 teaches that said upper reflective region comprises a plurality of p-doped quarter wave layer pairs (120) and that said lower reflective region comprises a plurality of n-doped quarter wave layer pairs (120).

Regarding Claim 43, see discussion on Claim 33.

Regarding Claim 44, determining the exact size and shape of the aperture is optimization and involves routine skill in the art.

### *Response to Arguments*

Applicant's arguments filed 10/29/02 have been fully considered but they are not persuasive. The Applicant makes the following arguments:

A. Sun et al. do not teach a protrusion or altering the aperture shape for a particular mode.

B. Sun et al. do not teach an aperture including a plurality of spaced apart slots

Regarding Argument A, Sun et al. teach in Figure 6 that multiple aperture shapes are known in the art and that "anisotropic apertures ... of virtually any other shape can be formed". Furthermore, it is known that altering the aperture shape, diameter, etc. effects the beam that is being emitted. Adding a protrusion is simply another example how to alter the aperture shape of the laser device. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to alter the aperture shape to limit the light emission to a particular mode.



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Determining the optimum shape to achieve the desired particular mode involves routine skill in the art.

Regarding Argument B, the same rationale follows here. Altering the aperture to have multiple openings is a way to control the desired output beam. Again, determining the optimum shape to achieve the desired particular mode involves routine skill in the art.

Furthermore, in regards to the section entitled "Incorrect Logical Conclusion", Applicant argues that "the prior art merely teaches a process that consistently creates smooth edges of an aperture for any arbitrary shape". However, Sun et al. teach in Figure 6 a cross-like aperture, which clearly has discontinuous points (not smooth).

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Application/Control Number: 09/650,969  
Art Unit: 2828

Page 8

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davienne Monbleau whose telephone number is ~~703-306-5803~~.

The examiner can normally be reached on Mon-Fri 8:00 am to 4:30 pm.

(571) 272-1945

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

*Davienne Monbleau*

DNM  
January 26, 2003

*Paul Ip*

PAUL IP  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

# TELEPHONE MEMO

## RECORD OF TELEPHONE CONVERSATION BETWEEN:

ST 2622.01 US  
DOCKET NO.  
Davienne Monbleau  
OUTSIDE PERSON/COMPANY (☐ Initiated Call)  
Renee Franks  
AT DVA (☒ Initiated Call)  
USPTO  
COMPANY/AFFILIATION OF OUTSIDE PARTY  
(571) 272-1945  
TELEPHONE NUMBER (If Known)

DATE: 4/26/04  
TIME: 9:55 a.m.  
SUBJECT: Notice of Allowance  
Box 6 - Request for Corrected Drawings

## ADDITIONAL COMMENTS:

I telephoned the Examiner to inquire if  
corrected drawings were required, since our files  
show drawings are correct. The Examiner instructed  
me to disregard Request for corrected drawings,  
as the drawings are correct and meet USPTO  
requirements.  
So, there is no need to submit  
corrected drawings.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**FEE TRANSMITTAL**  
**for FY 2004**

Effective 10/01/2003. Patent fees are subject to annual revision.

Applicant claims small entity status. See 37 CFR §1.27

**TOTAL AMOUNT OF PAYMENT (\$)** 1,345.00**Complete if Known**

Application Number	09/650,969
Filing Date	August 29, 2000
First Named Inventor	Robert L. THORNTON
Examiner Name	Davienne Monbleau
Art Unit	2878
Attorney Docket No.	ST 2622.01 US

**METHOD OF PAYMENT (check all that apply)**
☐ Check ☐ Credit Card ☐ Money Order ☐ Other ☐ None
☒ Deposit Account:Deposit Account Number **04-1175**Deposit Account Name **Discovision Associates**

The Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity			
Fee Code	Fee \$	Fee Code	Fee \$	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

**SUB TOTAL (1)** (\$ -0-**2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

	Extra Claims	Fee from Below	Fee Paid
Total Claims <input type="checkbox"/> -20** = <input type="checkbox"/> x <input type="checkbox"/> = <input type="checkbox"/>			
Independent Claims <input type="checkbox"/> -3** = <input type="checkbox"/> x <input type="checkbox"/> = <input type="checkbox"/>			
Multiple Dependent <input type="checkbox"/> = <input type="checkbox"/>			

Large Entity		Small Entity			
Fee Code	Fee \$	Fee Code	Fee \$	Fee Description	
1202	18	2202	9	Claim in excess of 20	
1201	86	2201	43	Independent claims in excess of 3	
1203	290	2203	145	Multiple dependent claim, if not paid	
1204	86	2204	43	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	

**SUBTOTAL (2)** (\$ -0-

\*\* or number previously paid, if greater; For Reissues, see above

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity		Small Entity			
Fee Code	Fee \$	Fee Code	Fee \$	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	1,330.00
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt.	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 C.F.R. 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
Other fee (specify) <b>Five (5) Patent Copies</b>					15.00

\* Reduced by Basic Filing Fee Paid

**SUBTOTAL (3)** (\$ 1,345.00**SUBMITTED BY**

Name Printed/Typed

**Caroline Do, Esq.**

Registration No. Attorney / Agent

**47,529**

Complete (if applicable)

Telephone

**(949) 660-5000**

Signature

*Caroline Do*

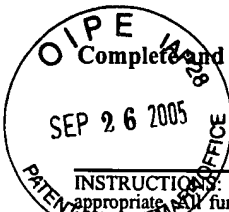
Date

**June 29, 2004**

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents: P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

## PART B - FEE(S) TRANSMITTAL



Complete and send this form, together with applicable fee(s), to: **Mail**

**Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (703) 746-4000**

**INSTRUCTIONS:** This form should be used for transmitting the **ISSUE FEE** and **PUBLICATION FEE** (if required). Blocks 1 through 4 should be completed where appropriate, and further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

**CURRENT CORRESPONDENCE ADDRESS** (Note: Legibly mark-up with any corrections or use Block 1)

22887 7590 03/29/2004

**DISCOVISION ASSOCIATES**  
**INTELLECTUAL PROPERTY DEVELOPMENT**  
**2355 MAIN STREET, SUITE 200**  
**IRVINE, CA 92614**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO, on the date indicated below.

Renee M. Franks	(Depositor's name)
<i>Renee M. Franks</i>	(Signature)
June 29, 2004	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,969	08/29/2000	Robert L. Thornton	SIROS-020	8650

**TITLE OF INVENTION:** NEAR FIELD OPTICAL APPARATUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	\$865 \$1,330	\$0	\$665	06/29/2004

EXAMINER	ART UNIT	CLASS-SUBCLASS
MONBLEAU, DAVIENNE N	2878	372-043000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Keiji Masaki

2 Steve A. Wong

3 Caroline T. Do

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Research Investment Network, Inc. Irvine, CA

Please check the appropriate assignee category or categories (will not be printed on the patent); ☐ individual ☒ corporation or other private group entity ☐ government

4a. The following fee(s) are enclosed:

- ☒ Issue Fee
- ☐ Publication Fee
- ☒ Advance Order - # of Copies 5

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 04-1175 (enclose an extra copy of this form).

Director for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature)

(Date)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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TRANSMIT THIS FORM WITH FEE(S)



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

THORNTON et al.

Application No.: 09/650,969

Filed: August 29, 2000

For: NEAR FIELD OPTICAL  
APPARATUS

Examiner: Davienne MONBLEAU

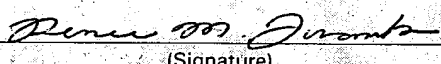
Art Unit: 2878

Confirmation No.: 8650

Attorney Docket No.: ST 2622.01 US

NOTIFICATION OF CHANGE IN FEE STATUS

MAIL STOP ISSUE FEE  
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June 29, 2004	Renee M. Franks
(Date)	(Type or print name)
	
(Signature)	


Dear Sir or Madam:

The Applicant is no longer entitled to Small Entity status. Accordingly, an Issue Fee in the amount of \$1,330.00 is paid.

Respectfully submitted,

DISCOVISION ASSOCIATES

Date: June 29, 2004

  
\_\_\_\_\_  
Caroline Do, Esq.  
Registration No. 47,529

DISCOVISION ASSOCIATES  
INTELLECTUAL PROPERTY DEVELOPMENT  
P.O. Box 19616  
Irvine, CA 92623  
(949) 660-5000

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Date: June 29, 2004

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Attn: Examiner Davienne MONBLEAU

From: Caroline Do, Esq. - Reg. No. 47,529

PLEASE CONTACT US IF ANY PAGES  
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Re: U.S. Patent Application Serial No.:  
09/650,969  
Filing Date: August 29, 2000  
Title: NEAR FIELD OPTICAL  
APPARATUS  
Confirmation No.: 8650  
Art Unit: 2878  
Inventor: Robert L. Thornton et al.  
Attorney Docket No.:  
ST 2622.01 US

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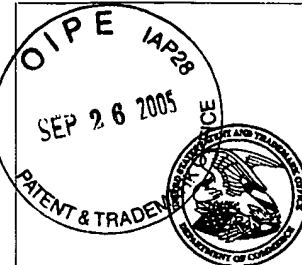
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TOTAL CREDITS

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CLOSING BALANCE

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ST 2022.01 US

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,969	08/29/2000	Robert L. Thornton	SIROS-020	8650

22887 7590 08/04/2005

DISCOVISION ASSOCIATES  
INTELLECTUAL PROPERTY DEVELOPMENT  
2355 MAIN STREET, SUITE 200  
IRVINE, CA 92614

EXAMINER

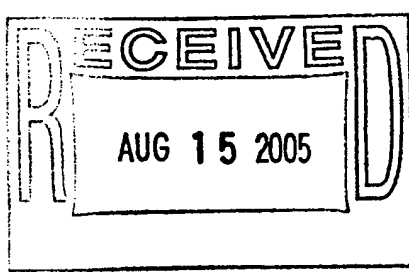
MONBLEAU, DAVIENNE N

ART UNIT PAPER NUMBER

2878

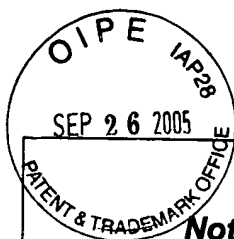
DATE MAILED: 08/04/2005

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Incoming: 8/15/05 ASDN  
Date Initials  
Outgoing: \_\_\_\_\_  
Date Initials  
✓ Caroline ✓ File ☐  
✓ Lori F. ☐  
✓ Steve W. ✓ Docketing  
Comments: Unintentional



## Notice of Abandonment

Application No.

09/650,969

Examiner

MONBLEAU, DAVIENNE N

Applicant(s)

Robert L. Thornton

Art Unit

2878

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address–**

This application is abandoned in view of:

1. ☐ Applicant's failure to timely file a proper reply to the Office letter mailed on \_\_\_\_\_.
  - (a) ☐ A reply was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply (including a total extension of time of \_\_\_\_\_ month(s)) which expired on \_\_\_\_\_.
  - (b) ☐ A proposed reply was received on \_\_\_\_\_, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.  
(A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
  - (c) ☐ A reply was received on \_\_\_\_\_ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
  - (d) ☐ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
  - (a) ☐ The issue fee and publication fee, if applicable, was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
  - (b) ☐ The submitted fee of \$\_\_\_\_\_ is insufficient. A balance of \$\_\_\_\_\_ is due.  
The issue fee required by 37 CFR 1.18 is \$\_\_\_\_\_. The publication fee, if required by 37 CFR 1.18(d), is \$\_\_\_\_\_.
  - (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☒ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
  - (a) ☐ Proposed corrected drawings were received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply.
  - (b) ☒ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on \_\_\_\_\_ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☐ The reason(s) below:

AG

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

## **Attachment to Notice of Abandonment**

**For questions concerning the notice contact**

**Office of Patent Publication**

**Image Assistance Center: 888-786-0101.**

Information is also available on the USPTO Internet web site:  
<http://www.uspto.gov/web/patents/pubs/abandonnotice.html>

### **Respond to the Notice of Abandonment by one of the following:**

**1. Petition To Withdraw Holding of Abandonment (See MPEP 711.03(c) I and 37 CFR § 1.181) No fee required**

Where an applicant contends that the application is not in fact abandoned (e.g., a reply was in fact filed), a petition under 37 CFR § 1.181(a) requesting withdrawal of the holding of abandonment is the appropriate course of action. Any petition under 37 CFR § 1.181 to withdraw the holding of abandonment not filed within 2 months of the mail date of a Notice of Abandonment may be dismissed as untimely under 37 CFR § 1.181(f). In order for a petition to be granted, the evidence must be sufficient according to 37 CFR § 1.8(b) Certificate of Mailing 37 CFR § 1.10 "Express Mail" mailing or MPEP 503 Postcard Receipt as Prima Facie Evidence. The petition should be addressed as follows:

By mail: Mail Stop: Issue Fee, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450  
By facsimile: 703-872-9306

**2. Petition To Withdraw Holding Of Abandonment Based On Failure To Receive Office Action (MPEP 711.03(c) II and 37 CFR § 1.181). No fee required**

Where an applicant contends that the original Notice of Allowance and Fee(s) Due was never received, if adequately supported, the Office may grant the petition and remail the Office action. The showing required establishing non-receipt of an Office communication must include a statement from the practitioner stating that the Office communication was not received and attesting to the fact that a search of the file jacket and docket records indicates that the Office communication was not received. A copy of the docket record where the nonreceived Office would have been entered had it been received and docketed must be attached to and referenced in practitioner's statement.

Petition should be addressed to the Technology Center handling the application as follows:

By mail: Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450  
By facsimile: 703-872-9306

**3. Petition To Revive An Abandoned Application (See MPEP 711.03(c) III)**

Where there is no dispute as to whether an application is abandoned (e.g., the applicant's contentions merely involve the cause of abandonment) a petition under 37 CFR § 1.137 (a) or (b) (accompanied by the appropriate petition fee) is necessary to revive the abandoned application. The text of these rules is available on the USPTO Internet Web site. Forms for these petitions, "Petition For Revival Of An Application For Patent Abandoned Unavoidably Under 37 CFR § 1.137(a)," PTO/SB/61, and "Petition For Revival Of An Application For Patent Abandoned Unintentionally Under 37 CFR 1.137(b)," PTO/SB/64, are available in the forms section of the USPTO website: <http://www.uspto.gov>.

Petitions under 37 CFR § 1.137 should be addressed to the Office of Petitions as follows:

By mail: Mail Stop Petition, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450  
By facsimile: 703-872-9306

Note: Abandonment takes place by operation of law for failure to reply to an Office action or timely pay the issue fee, not by operation of the mailing of a Notice of Abandonment

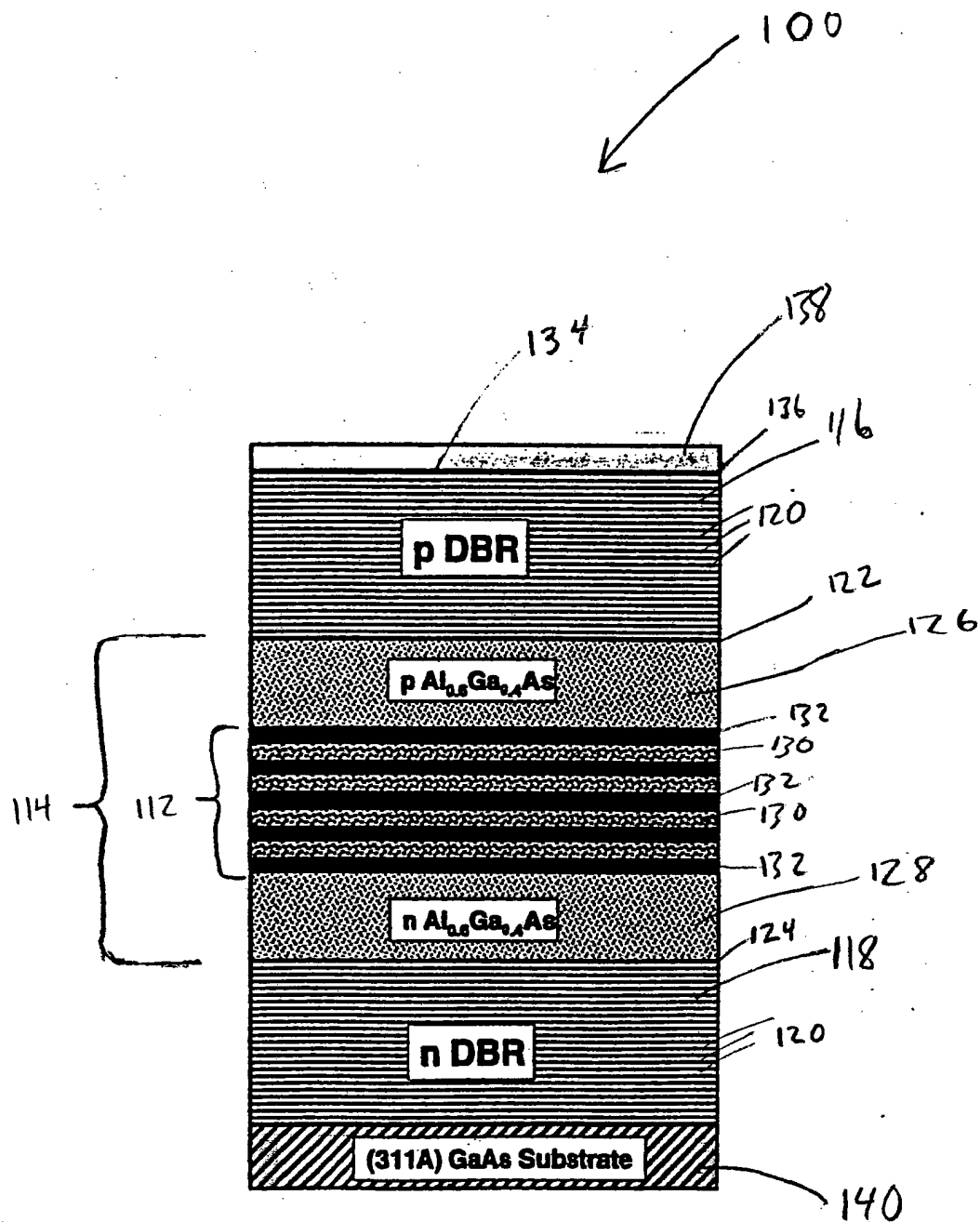


Fig. 27 (PRIOR ART)

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